

REMARKS/ARGUMENTS

This is a Response to the Office Action mailed October 7, 2003, in which a three (3) month Shortened Statutory Period for Response has been set, due to expire January 7, 2004. Thirty-two (32) claims, including four (4) independent claims, were paid for in the application. Claims 20-23 have been canceled. Claims 1-2, 13-14, 24 and 32 have been amended. No new matter has been added to the application. No fee for additional claims is due by way of this Amendment. The Commissioner is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090. Claims 1-19 and 24-32 are pending.

Objections

The drawings were objected to because Figures 5, 6 and 7 do not show the "directional arrows" of the cooling air stream. Figures 5, 6 and 7 have been amended to show the "directional arrows" of the cooling air stream, and three sheets of drawings are presented herewith for approval. Applicants note that the coolant flow path is also generally shown by the large directional arrow in Figure 3.

Claims 2-3, 14-18 and 24-31 were objected to as being dependent on a rejected base claim. Claims 2, 14 and 24 have been rewritten in independent form to include all limitations of the base claims and any intervening claims. Claims 2, 14 and 24 are thus allowable. It is noted that in rewriting the claims in independent form, the scope of the claims has not changed and the amendment should not be considered as narrowing the scope of claims 2, 14 and 24. Claims 3, 15-18 and 25-31 depend from claims 12, 14 and 24, and are thus likewise allowable.

Rejections Under 35 U.S.C. §102(b) and 35 U.S.C. § 103

Claims 20 and 21 were rejected under 35 U.S.C. §102(b) as being anticipated by Meltser et al. (U.S. Patent No. 5,763,113).

Claims 1, 4-8, 13, 19, 22-23 and 32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Meltser et al. (U.S. Patent No. 5,763,113).

Claims 9-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Meltser et al. (U.S. Patent No. 5,763,113) in view of Fletcher et al. and further in view of Boehm et al. (U.S. Patent No. 6,461,751). Applicants note that neither the PTO-892 provided by the Examiner, nor any of the Information Disclosure Statements filed by Applicants in this matter

reference a patent issued to Fletcher et al. Further, the Examiner has not provided identifying information beyond the applicant name in the text of the Office Action, nor has the Examiner specifically discussed the teachings of the Fletcher et al. patent. Consequently, Applicants are unable to specifically address the teachings of Fletcher et al.

The exemplary embodiments of Applicants' invention are directed to detecting hydrogen discharge from the fuel cell system, and particularly from the fuel regulating system. In one aspect, a hydrogen sensor is positioned in a coolant flow path in the vicinity of the fuel regulating system, and downstream from the fuel cell stack. Thus, the coolant flow will direct releases of hydrogen from the stack to the hydrogen sensor. Additionally, or alternatively, the fuel regulating system may be located in the coolant flow path. Thus, the coolant flow may also direct releases of hydrogen from the fuel regulating system to the hydrogen sensor.

U.S. 5,763,113 issued to Meltser et al. (hereinafter Meltser) is generally directed to control of a fuel cell system. In particular, Meltser teaches the use of a hydrogen sensor to measure a hydrogen concentration in the cathode exhaust stream (*i.e.*, output side of the oxidant flow path), which may indicate a leak across the membrane of the fuel cell from the cathode (oxidant) to the anode (fuel) side. Meltser, col. 2, lines 33-35. Importantly, Meltser teaches that the hydrogen concentration sensor is in the cathode exhaust stream, and does not teach or suggest locating a hydrogen sensor in the coolant flow path.

Turning to the specific claim language, as amended claim 1 recites, *inter alia*, "an oxidant delivery system comprising an oxidant flow path to supply an oxidant to the stack; *the oxidant flow path different from the coolant flow path* and, a hydrogen concentration sensor located in the vicinity of the fuel regulating system, and in the coolant flow path at a location downstream of the stack." (Emphasis added.) Meltser teaches locating the hydrogen sensor in the cathode exhaust stream (*i.e.*, oxidant flow path).

As amended claim 13 recites, *inter alia*, "an oxidant delivery system comprising an oxidant flow path to supply an oxidant to the stack; *the oxidant flow path different from the coolant flow path*; and, a hydrogen concentration sensor located in the vicinity of the fuel regulating system, and in the coolant flow path at a location downstream of the stack." (Emphasis added.) As discussed above, Meltser teaches locating the hydrogen sensor in the cathode exhaust stream (*i.e.*, oxidant flow path).

As amended, claim 32 recites, *inter alia*, "means for supplying an oxidant to the stack, comprising *an oxidant flow path different from the coolant flow path*; and, a hydrogen concentration sensor located in the vicinity of the means for regulating the supply of fuel, and in

the coolant flow path at a location downstream of the stack.” (Emphasis added.) As discussed above, Meltser teaches locating the hydrogen sensor in the cathode exhaust stream (*i.e.*, oxidant flow path).

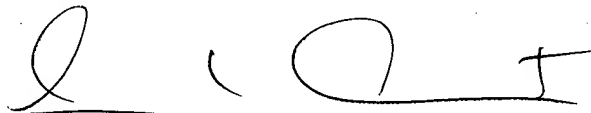
Conclusion

Applicants thank the Examiner for indicating the allowable subject matter of claims 2-3, 14-18 and 24-31. Overall, the cited references do not singly, or in any motivated combination, teach or suggest the claimed features of the embodiments recited in independent claims 1, 2, 13, 14, 24 and 32, and thus such claims are allowable. Because the remaining claims depend from allowable independent claims 1, 2, 13, 14, 24 and 32, and also because they include additional limitations, such claims are likewise allowable. If the undersigned attorney has overlooked a relevant teaching in any of the references, the Examiner is requested to point out specifically where such teaching may be found.

In light of the above amendments and remarks, Applicants respectfully submit that all pending claims are allowable. Applicants, therefore, respectfully request that the Examiner reconsider this application and timely allow all pending claims. Examiner Mercado is encouraged to contact Mr. Abramonte by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the claims, he is encouraged to contact Mr. Abramonte by telephone to expediently correct such informalities.

Respectfully submitted,

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Enclosures:

- Postcard
- 3 Sheets of Formal Drawings (Figures 5-7)
- 3 Sheets of Annotated Drawings Showing Changes

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